

8020PCT

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Patent Claims

SUB
A 21. A process for the heat treatment of structure castings made from an aluminum alloy, comprising the steps of:

- placing the structure casting onto a contour-embracing product receiving device,
- heating to 490°C over the course of approximately 30 minutes,
- holding the temperature of 490°C for a time of between 60 and 90 minutes,
- quenching in air from 490°C to approximately 100°C over the course of approximately 4 minutes, if appropriate followed by quenching in water,
- heating to 250°C over the course of approximately 15 minutes,
- holding the temperature of 250°C for a time of between 30 and 105 minutes,
- quenching in air to 40°C, if appropriate followed by quenching in water.

2. The process as claimed in claim 1, in which the temperature of 490°C is held for approximately 60 minutes, and the temperature of 250°C is held for approximately 30 minutes.

AMENDED SHEET

3. The process as claimed in claim 1, in which the temperature of 490°C is held for approximately 90 minutes, and the temperature of 250°C is held for approximately 30 minutes or approximately 45 minutes or approximately 60 minutes or approximately 105 minutes.

4. The process as claimed in one of claims 1-3 using an aluminum alloy, having the following composition:

Si: 2-11.5%

Fe: 0.15-0.4%

Mg: 0.3-1.0%

Cu: <0.02%

Mn: 0.4-0.8%

Ti: 0.1-0.2%

remainder aluminum and trace elements.

5. The process as claimed in one of claims 1-3 using an aluminum alloy, having the following composition:

Si: 1-3%

Fe: 0.15-0.4%

Mg: 3-5.5%

Cu: <0.02%

Mn: 0.4-0.8%

Ti: 0.1-0.2%

Zn: <0.08%

remainder aluminum and trace elements.

6. The process as claimed in one of claims 1-3 using an aluminum alloy, having the following composition:

Si: 7-11.5%

Fe: 0.15-0.4%

Mg: 0.3-0.4%

Cu: <0.02%

Mn: 0.4-0.6%

Ti: 0.15-0.2%

Sr: up to 300 ppm

remainder aluminum and trace elements.

7. The process as claimed in one of claims 4-6, in which the aluminum alloy, before being introduced into the casting process, has been subjected to a melt treatment, such as degassing and/or filtration.

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